

## REMARKS

Independent claims 1 and 31 have been amended to positively state “the sensor being removable from the housing for subsequent reuse, the functionality of said sensor being intact after removal from the housing”. Support for this amendment is provided on page 8, lines 4-14.

Independent claims 1 and 31 have been amended to replace the term “releasably” with “removably”. The detailed description uses the term “removable”, rather than the word “releasable”.

Claims 1 and 31 have been clarified by moving the position of the limitation “in use and housing being sealably connected to the port” to later in each claim, and have added the limitation of “port of said” cartridge or open tubular section.

Applicants submit that these amendments do not alter the scope of the claims as previously considered by the Examiner. The amendments have been made only to clarify the scope.

### *Claim Rejections - 35 U.S.C. §103*

Claims 1, 17, 26-34, 42, 46, 47, 50 and 51 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over United States Patent No. 6,272,933 to Gradon in view of United States Patent No. 4,525,937 to Strandberg, Jr. Reconsideration and withdrawal of the rejection is requested.

Independent claims 1 and 31 specify a sensing device comprising the following components and interactions between components:

- a) A sensor.

- b) A housing with a filter attached.
- c) The housing removably contains the sensor. Therefore, the housing with filter and the sensor form a subassembly of the sensing device.
- d) A cartridge or open tubular section having a port. In use, the cartridge or open tubular section is removably coupled in line between a humidifier and a conduit.
- e) The housing and the sensor subassembly is removably coupled to the port.
- f) The filter and hosing prevent contamination passing from the flow of gases to the sensor, the sensor being contamination free and removable from the housing and filter for subsequent reuse.

Therefore, the sensing device according to claims 1 and 31 requires a connector (the cartridge or open tubular section) to be removably connectable in line between a humidifier and a conduit. This connector has a port to which a subassembly is removably coupled. The subassembly is a housing with a filter attached to the housing, and a sensor removably contained in the housing.

The sensing device arrangement of claims 1 and 31 allows a sensor to be reused across patients without cross contamination. The housing can be moved from the port of the cartridge or open tubular section. The port or open tubular section need not be removed from the breathing circuit. Once the housing is removed from the port, the sensor may be removed from the housing and filter. The housing and filter may be sterilized for reuse or discarded (e.g. recycled). The sensor can be installed in a new housing with filter (or sterilized pre-used housing with filter). The new housing with filter containing the sensor may be inserted into the port of a cartridge or open tubular section of another patient's breathing circuit.

In *In re Certain Convertible Rowing Exercises, Inv. No. 337-TA-212*, USITC Pub. No. 2111, 1988 ITC LEXIS 68, at \*180 (Aug. 1988) it was found that “removably coupled” means “joined in such a manner as to be readily separable.” This was quoted in *Burke Inc. v Everest & Jennings Inc.*, 29 U.S.P.Q.2d 1393, 1395 n.5 (Fed. Cir. 1993). A copy of the *Burke Inc.* case is enclosed.

The words “removably contained” and “removably coupled” of claims 1 and 31 are intended to be interpreted in the same manner as discussed in the above cases. This is consistent with the usage in the present specification.

Gradon does not disclose a housing removably containing a sensor. Furthermore, in a side-by-side comparison with Gradon, the sensor 24 of the claimed invention is equivalent to the flow probe 19 of Gradon, which includes sensing means 34 and 35 and sensor housing means 32 and 33. The housing 25 of the claimed invention including filter 27 is an additional element not present in Gradon. The claimed invention comprises an additional housing with filter that, for example, may removably contain the flow probe 19 of Gradon. For example, the additional housing 25 with filter 27 could be removably coupled to the connector 42 of Gradon to prevent contamination reaching flow probe 19.

If the sensor 24 of the claimed invention was to be used in a first system providing humidified gases to a first patient and a second system providing humidified gases to a second patient, the housing 25 with filter 27 removably containing the sensor 24 could be removed from the cartridge 22 of the first system. The housing 25 with filter 27 could be disposed of or set aside for sterilization and the sensor 24 fitted to a new or previously used but sterilized housing 25 and filter 27 before fitting into the cartridge 22 of the second system. In this way, the claimed

invention allows use of a sensor, for example the sensor probe 19 of Gradon, across a plurality of patients without cross-contamination.

Strandberg does not disclose a sensing device with a filter attached to a housing.

Strandberg does not disclose a filter that prevents contamination passing from the flow of gases to the sensor. The filter of Strandberg is an integral part of the sensing element. As disclosed in Col. 2, lines 36-49, the sensor 11 described in Strandberg comprises the sintered steel 11b, cotton wool 11a and perforated stainless steel plate 11c. As shown, electrical conductors 12a and 12b are connected to the sintered steel and the perforated plate. The cotton wool is electrically stabilized and is held firmly between plate 11c and sintered steel 11b to ensure good electrical contact. As explained in Col. 4, lines 30-34, as the humidity level increases the resistivity of sensor 11 comprising items 11a, 11b and 11c drops. That is the resistivity between plate 11c, cotton wool 11a and sintered steel 11b decreases. Therefore, in Strandberg, the sensor 11 comprising items 11a, 11b and 11c cannot be removed from a filter which is attached to a housing removably containing the sensor 11 for preventing contamination passing from the gases to the sensor 11. Items 11a and 11b are part of the sensing element itself.

Even in combination, Gradon and Strandberg fail to disclose the required features of claims 1 and 31 of the present invention.

For the arrangement disclosed by Gradon, the sensor (flow probe item 19) cannot be used across different patients without sterilizing the delicate sensor item 19 itself. Likewise, for the arrangement disclosed by Strandberg, the sensor cannot be used across different patients without sterilizing the delicate sensor item 11 itself. Strandberg describes a sensor for controlling a

drying apparatus and therefore does not consider use of a sensor across different patient breathing circuits.

Therefore, Applicants submit that the combination of Gradon and Strandberg does not render obvious independent claims 1 and 31. Reconsideration and allowance is requested.

Claims 17, 26-30, 42, 46 and 47 are dependent upon claim 1 which Applicant submits is allowable. Claims 32-34, 42, 50 and 51 are dependent upon claim 31 which Applicant submits is allowable. Therefore, Applicants submits that claims 17, 26-30, 32-34, 42, 46, 47, 50 and 51 are allowable. Reconsideration and allowance is requested.

Claims 35, 36, 48 and 49 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Gradon in view of Strandberg, Jr. and further in view of United States Patent No. 4,366,821 to Wittmaier et al. Claims 48 and 49 are dependent upon claim 1 which Applicant submits is allowable. Claims 35 and 36 are dependent upon claim 31 which Applicant submits is allowable. Therefore, Applicants submits that claims 35, 36, 48 and 49 are allowable. Reconsideration and allowance is requested.

*Interview on March 10, 2010*

Applicants thank the Examiner and his Supervisory Patent Examiner for the courtesy of the interview with Applicants' attorney, Linda Palomar, on March 10, 2010. In the Interview, it was discussed whether the sensor is not removable from the housing in Gradon, and whether the filter 11b in Strandberg is a required part of the sensor. The Examiner continued to maintain that the sensor is removable from the housing in Gradon, and the filter 11b in Strandberg is a not a required part of the sensor.

Applicants' attorney requested that the Examiner specifically point out where in Col. 9, lines 1-38 of Gradon is the support for his statement of "it is possible to take the sensors 34 & 35 out of 19". The Examiner did not point out any support in this section of Gradon and instead referred to Col. 8, lines 57-58 that states the flow probe 19 is "preferably" formed by moulding. Applicants submitted that this does not mean that the sensor is releasable from the housing. The Examiner continued to state that the claim does not require that the functionality of the sensor and/or housing is maintained after removal. Applicants' attorney disagreed that this interpretation was reasonable in view of the meaning in the application.

Applicants' attorney requested to be advised that if the claims were amended to specify that the functionality of the housing and the sensor are maintained after the sensor is removed from the housing, would this move the application towards allowance. The Examiner said that this would likely overcome Gradon, but would be subject to a further search.

With regard to Strandberg, the Examiner contended that the filter 11b is attached to the housing 12d/13a/14a and that it was not a necessary part of the sensor. Applicants' attorney argued that Strandberg defines 11b as part of the sensor in Col. 2, lines 36-45. The Examiner stated that it appeared that the sensing function would occur without filter 11b. Applicants' attorney argued that this is not correct as the conductor 12a is attached to filter 11b.

At this point, the Supervisory Patent Examiner said that it was clear to her that we would not be able to agree and that we should submit a formal response. The conference was then terminated. After that, Applicants' attorney received another call from the Examiner and his Supervisory Patent Examiner in which they said that if the claims were amended to state that the

sensor were suspended wholly within the tubing, FIG. 3, then this would be allowable over the art of record.

***Interview Summary Form***

In the Interview Summary Form of March 17, 2010, the Examiner directed Applicants to reconsider the prior art cited on page 8 of the Office Action issued November 24, 2008, particularly United States Patent No. 5,291,897 to Gastrin. Applicants have considered all seventeen prior art references. These references do not alter their opinion that the application is now in order for acceptance. With particular regard to Gastrin, Gastrin also fails to achieve the benefit of the claimed invention. Contamination of the sensing element 2 of Fig. 9 is not prevented given the arrangement disclosed in Gastrin.

Applicants have concurrently submitted a Petition for a Two-Month Extension of Time with this Amendment.

Should the Examiner have any questions regarding this Amendment, the Examiner is invited to contact one of the undersigned attorneys at (312) 704-1890.

Dated: April 14, 2010

Respectfully submitted,

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prior to inputting it to a

tronics does not seriously challenge the suggestions of the combinations of the prior art or the secondary considerations.

—Tronics limits its analysis to the prior art individually, asserting in a fashion that each such reference "over" the previous reference at the individual reference does not suggest the claimed combination. The references, however, are far from their individual teachings were not suggested by the district court and will be set forth here. The test for obviousness is whether a single reference teaches the claimed combination. First, the prior references taught the claimed combination, the combination would be obvious. Obviousness does not require that a reference suggest all the elements of combination. In determining obviousness, references are read not in isolation but as they fairly teach in combination the art as a whole. *In re Merck & Co., Inc.*, 2d 1091, 1097, 231 USPQ 375, 377, Cir. 1986). Consequently, Tronics' argument on the prior art — reference — is not persuasive.

Tronics also argues that the district court erred in comprehending the supposedly and unexpected benefit of feeding a modulated signal into a bargraph — the sensor to "self-monitor" its output and thereby avert system shutdown following physical realignment of the operating. Tronics concedes such a function is claimed in claim 3, but means for manually adjusting the electronic processing circuit. This function, Tronics asserts, is known in the prior art and therefore determination that the invention would have been obvious. Banner argues that the court correctly held that would have been obvious the modulation of a signal prior to a signal that could have been an obvious design choice. Banner says that the "self-monitoring" function was disingenuously created by the court, arguing that it is not the patent and cannot in fact be by the device of claim 3 any prior art. Therefore, the prior art cannot save the claim from

structure may be shown to have been because it is suggested by the even though a particular benefit of the invention is not disclosed in the prior art. *In re*

*Dillon*, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (en banc). Although a surprising or unexpected result of claimed structure may be indicative of non-obviousness, the question is one for evaluation by the court.

The district court in this case disagreed with Tri-Tronics's "critical sequence" theory — that the demodulated signal input to a bargraph yielded results surprising and unexpected from the teachings in the prior art. We cannot say that the district court clearly erred in this regard. It is not even clear that the invention of claim 3 in fact achieves a self-monitoring function and particularly one that would be better than the prior art combinations. The "self-monitoring" function is not claimed in the Warner patent. The "manually adjustable control means" of claim 3, on which Tri-Tronics relies, refers to a DC amplifier whose gain may be adjusted (with a screwdriver for example) so as to increase the amplitude of the DC signal output to the bargraph, *see, e.g.*, Warner patent, col. 5, lines 23-28; col. 7, lines 10-31, and not to a "self-monitoring" function. Moreover, we have not been shown even a mention in the patent document or the prosecution history of Tri-Tronics's now "critical" self-monitoring function.

In view of the express suggestions in the prior art to make the combination of claim 3, we agree with the district court that such combination would have been obvious to one of ordinary skill in the art. We therefore affirm the judgment of the district court that claim 3 is invalid.

Tri-Tronics finally argues that the district court erred in finding no infringement of claims 3-7 and 10 because it failed to compare the accused product to the claims. Tri-Tronics similarly argues that the district court erred in enjoining Tri-Tronics from asserting the patent because it failed to find the patent unenforceable for inequitable conduct. We disagree with both arguments. Because invalid claims cannot be infringed, *Kendel, Inc. v. Sunspool Corp.*, 714 F.2d 1580, 219 USPQ 8, 12 (Fed. Cir. 1983), the district court did nothing wrong in finding that the invalid claims asserted by Tri-Tronics, 3-7 and 10, were not infringed. In addition, it is not error for the district court to enjoin a patentee from enforcing or attempting to enforce patent claims that the court has held invalid. Although the district

court's language enjoined Tri-Tronics from enforcing or attempting to enforce the "patent," the clear purport of the injunction was to prevent Tri-Tronics from enforcing the claims that the district court discussed in its opinion and held invalid, *i.e.*, claims 1-7 and 10.

D. In its cross-appeal, Banner argues that the district court should have awarded it attorney fees because Warner engaged in inequitable conduct in obtaining his patent and committed patent misuse by asserting an invalid and unenforceable patent. Specifically, Banner alleged that Warner affirmatively misrepresented to the Patent and Trademark Office the nature of the Fayfield patent, and failed to disclose to the Office the 1982 Linear Databook, which Warner had in his possession and actually relied on in developing his photosensing apparatus.

[3] While the enforcement of a patent later held to be invalid or unenforceable is not properly characterized as "patent misuse," we have held that inequitable conduct may constitute a basis for an award of attorney fees under 35 U.S.C. § 285 (1988). *A.B. Chance Co. v. RTE Corp.*, 854 F.2d 1307, 1312-13, 7 USPQ2d 1881, 1885 (Fed. Cir. 1988). Tri-Tronics concedes that the district court "committed . . . legal error" when it "failed to make findings on its denial of attorney's fees." Accordingly, the decision of the district court denying Banner attorney fees is vacated and the case is remanded for a determination as to this issue.

## COSTS

Banner shall have its costs.

## Court of Appeals, Federal Circuit

Burke Inc. v. Everest & Jennings Inc.

Nos. 92-1173, -1174, -1301

Decided March 31, 1993

(Unpublished)

## PATENTS

### 1. Patentability/Validity — Specification — Claim adequacy (§115, 1109)

Federal district court erred by directing verdict that claim for personal mobility vehicle is invalid for indefiniteness under 35 USC 112, paragraph 2, because term "re-

tronics has not challenged on appeal the judgment of the district court invalidating claims 3-7 and 10, which depend from claim 3, on obviousness.

\* Reply Br. for Appellant at 31.

"movably connecting" failed to particularly point out and distinctly claim invention, since specification shows that purpose of vehicle is to enable users with limited dexterity to easily separate vehicle's modular components, and since one of ordinary skill in art would thus understand "reasonably connecting" to mean separable without need for tools.

## 2. Infringement — Construction of claims (\$120.03)

Federal district court, in directing verdict of non-infringement of claims for personal mobility vehicle, erred by attempting to ascertain from patent specification what it perceived to be "inventive essence," and by then limiting claim through preamble to that perceived essence; court thus improperly read weight references in specification into claim as limitation on its scope.

## 3. Patent construction — Claims — Defining terms (\$125.1305)

Terms "comprising" and "including" are, as general rule, open-ended terms which cover structural elements recited plus additional elements.

## Particular patents — General and mechanical — Personal vehicles

4,560,739, Kramer, personal mobility vehicle, judgment of invalidity and non-infringement vacated.

Appeal from the U.S. District Court for the Central District of California, Letts, J.; 22 USPQ2d 1368.

Consolidated patent infringement actions by Burke Inc. against Everest & Jennings Inc. and Invacare Corp. From federal district court's order directing verdict of invalidity and non-infringement, parties cross-appealed. Vacated and remanded.

[Editor's Note: The Court of Appeals for the Federal Circuit has indicated that, "pursuant to Fed. Cir. R. 47.8, this disposition is not citable as precedent. It is a public record."]

Before Archer, Michel, and Rader, circuit judges.

Archer, J.

Burke, Inc. appeals from the judgment of the United States District Court for the Central District of California (MDL Docket No. 809-1SL) entered November 29, 1991, on an order directing a verdict that claim 1 of U.S. Patent 4,560,739 is invalid and not infringed by Everest & Jennings, Inc. (E&J)

and Invacare Corp. We vacate the judgment and remand for trial.<sup>1</sup>

## DISCUSSION

U.S. Patent No. 4,560,739, which issued to Kramer (the Kramer patent), is directed to a personal mobility vehicle, a small, electrically powered three-wheel device, commonly referred to as a scooter, that gives mobility to handicapped or elderly persons. Burke, assignee of the Kramer patent, sued E&J and Invacare alleging that E&J's "Cartette" and Invacare's "Tri-Rolls" products infringed claim 1 of the Kramer patent.

At the close of Burke's case in chief, E&J and Invacare moved for a directed verdict that claim 1 is invalid for indefiniteness and not infringed.<sup>2</sup> The court granted the motion, and this appeal followed.<sup>3</sup>

### I.

We review *de novo* the question whether E&J and Invacare were entitled to a directed verdict. See *Arachnid, Inc. v. Merit Indus., Inc.*, 939 F.2d 1574, 1577, 19 USPQ2d 1513, 1516 (Fed. Cir. 1991). In order to decide whether E&J and Invacare were so entitled, we, as was required of the district court,

must determine whether there exists evidence of record upon which a jury might properly [return] a verdict in [Burke's] favor when the correct legal standard is applied. If there is not, [E&J and Invacare were] entitled to have the question removed from the jury and decided as a matter of law.

*Jamesbury Corp. v. Litton Indus. Prods., Inc.*, 756 F.2d 1556, 1560, 225 USPQ 253, 256 (Fed. Cir. 1985).

<sup>1</sup> In view of our disposition we do not consider the cross-appeals of E&J and Invacare from the court's order denying attorney fees and from the court's order denying summary judgment on matters distinct from the appealed from judgment, see 28 U.S.C. § 1291 (1988) (*Everest v. United States*, 466 F.2d 131, 136 & n.3 (10th Cir. 1972); *Dutton v. Cities Serv. Defense Corp.*, 1972-2 F.2d 458, 458-59 (8th Cir. 1952)). Burke's request for sanctions under the Federal Rule of Appellate Procedure is against E&J and Invacare for frivolous cross-appeals. In their briefs, E&J and Invacare also requested sanctions against Burke for a frivolous appeal but withdrew their request at oral argument.

<sup>2</sup> The motion was made under Federal R. of Civil Procedure 50(a) before "directed verdict" was renamed "judgment as a matter of law."

<sup>3</sup> Burke's motion for reconsideration was denied. *In re Burke, Inc.*, 786 F. Supp. 1357, 19 USPQ2d 1368 (C.D. Cal. 1992).

257 (Fed. Cir. 1985). In making this determination, this court will reverse a decision on an issue of law if the decision was incorrect as a matter of law. *See Read Corp. v. Portec, Inc.*, 970 F.2d 816, 821, 23 USPQ2d 1426, 1431 (Fed. Cir. 1992); *Helsig v. United States*, 719 F.2d 1153, 1158 (Fed. Cir. 1983). As to factual matters, the district court in the first instance, and this court on appeal, must determine as a matter of law whether E&J and Invacare have demonstrated a lack of substantial evidence which could support a verdict in favor of Burke. *See Read Corp.*, 970 F.2d at 821, 23 USPQ2d at 1431. In directing a verdict, the court was required to view all the fact evidence in a light most favorable to the nonmovant. It could not determine the credibility of witnesses or choose between conflicting fact evidence, and it was required to draw all reasonable inferences in favor of the nonmovant. *See Railroad Dynamics, Inc. v. A. Stuck Co.*, 727 F.2d 1506, 1513, 220 USPQ 929, 936 (Fed. Cir. 1984). The ultimate question in this case is whether E&J and Invacare have demonstrated that, at this particular stage of the litigation, they are entitled to judgment as a matter of law.

## II.

The district court directed a verdict that claim 1 is invalid for indefiniteness under 35 U.S.C. § 112, para. 2 (1988), holding that the term "removably connecting" in paragraph 1(b)(6) of claim 1 failed to "particularly point out and distinctly claim" Krammer's invention.<sup>1</sup>

Claim 1 reads:

A personal mobility vehicle comprising:  
(a) a main frame unit including:  
(1) a floor pan having a back end;  
(2) a front wheel spindle pivotally connected to said pan;  
(3) a front ground engaging wheel rotatably mounted on said spindle; and  
(4) a steering tiller connected to said spindle;  
(b) a rear drive unit including:  
(1) a drive unit frame;  
(2) a rear axle means rotatably mounted on said drive unit frame;  
(3) a pair of spaced apart ground engaging rear wheels mounted on said rear axle means in spaced apart relation;  
(4) a motor mounted on said frame;  
(5) transmission means drivingly connecting said motor to said rear axle means; and  
(6) frame connection means removably connecting said drive unit frame to said floor pan of said main frame unit with said floor pan back end adjacent said rear wheels;  
(c) a seat unit including a seat member, said seat unit being connected to said floor pan of said main frame unit in proximity to said floor

Indefiniteness is a question of law, *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986), which must be proved by the party asserting it by clear and convincing evidence, *see Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1375, 231 USPQ 81, 87 (Fed. Cir. 1986). A claim is indefinite where those skilled in the art would not understand what is claimed when reading the claim language in light of the specification and prosecution history. *See Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 1218, 18 USPQ2d 1016, 1030 (Fed. Cir. 1991); *Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 871 F.2d 1054, 1063, 10 USPQ2d 1257, 1263-64 (Fed. Cir. 1989); *Orthokinetics, Inc.*, 806 F.2d at 1576, 1 USPQ2d at 1088.

Burke asserted that one of ordinary skill in the art would understand the term "removably connecting" to mean separable without the need for tools. The district court rejected this argument on the basis that "nothing in the dictionary definition of the word [removably], or in common usage, or anywhere in the patent" supports a conclusion that the claim means connecting in such a way as to be separable without the need for a tool.<sup>2</sup>

[1] Contrary to the district court's statement, the patent specification shows that a purpose of the patented vehicle is to enable users with limited dexterity to easily separate the vehicle's various modular components. The specification describes a bayonet locking pin used to separate the drive unit from the floor pan. The specification also discloses other connections allowing the connected components to be readily separated: plugs and sockets are used to undo electrical connections; a lever is used to release the seat; and a handle or strap is used to lift the battery from the floor pan. "The patent law

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pan back end with said seat member in spaced relation to said pan;  
(d) a battery unit including a battery member, said battery unit being removably positioned on said floor pan of said main frame unit in proximity to said back end thereof; and  
(e) control means removably interconnecting said battery member with said motor to selectively operate said motor to propel said vehicle.  
(Emphasis added.)

<sup>1</sup> Contrast this with *In re Certain Convertible Rowing Exercisers*, Inv. No. 337-TA-22, USTIC Pub. No. 2111, 1988 ITC LEXIS 68, at \*180 (Aug. 1988), in which the United States International Trade Commission viewed as definite the plain meaning of "removably coupled" derived from Webster's New Collegiate Dictionary joined in such a manner as to be readily separable.

does not require that all possible [connections] be listed in the patent, let alone that they be listed in the claims." *Orthokinetics, Inc.*, 806 F.2d at 1576, 1 USPQ2d at 1088. We therefore disagree with the district court that the patent fails as a matter of law to adequately disclose a definite meaning for the term "removably connecting."

Further, during Burke's case in chief Kramer testified that a person of ordinary skill in the art would understand "removably connecting" to mean a connection that is separable without the use of tools. This testimony was corroborated by Invacare's own expert, Hyman Pogir, whose deposition reflects that he had no problem understanding a distinction between a tools and no-tools connection. In spite of this evidence, the district court viewed the "ordinary meaning and usage" of "removably" as designating a removable component connected to a stationary component that can be separated from the stationary component leaving both components intact, i.e., not designating a removable component that is connected to a stationary component by way of a third component. Assuming that this "ordinary meaning" has record support that it represents an understanding of those of ordinary skill in the art, it is only one part of the evidence. On motion for directed verdict, the district court erred as a matter of law in favoring this evidence, and disregarding that which supported Burke's position.

On appeal, E&J and Invacare do not seriously argue that the district court was correct in holding that "removably connecting" means nothing definite to those of ordinary skill in the art. Instead, they argue that direction of the verdict in this case was required under the Supreme Court decision in *Permatite Co. v. Graver Corp.*, 284 U.S. 52 [11 USPQ 118] (1931), an argument rejected by the district court. In *Permatite*, the Court held a patent invalid for indefiniteness where the plaintiff claimed at trial that his invention was different from what had been claimed in his patent. *See id.* at 58; *see also* 2 D. Chisum, *Patents*, § 8.03 [1] [b] (1992) (discussing *Permatite*). Here, the issue is the meaning of claim language; Burke does not contend that Kramer's invention was different from what had been claimed. *Permatite* is, therefore, inapposite.

Accordingly, the district court erred in granting a directed verdict of invalidity.

### III.

A. The district court based its direction of a verdict of noninfringement on two grounds. First, the court reasoned from the specifica-

tion that the "essence of the invention" was a flexible-use vehicle with light-weight components, so that without a weight limitation in the claims, the patent would be indefinite for failing to claim the invention. Because the claim itself contained no express weight limitation the court considered it necessary, to save the claim's validity, to interpret the language of the preamble of claim 1, "personal mobility" vehicle, to mean a vehicle having components of 30 pounds or less. This 30 pound limitation was based on language appearing in the patent's abstract and summary of the invention. Because the accused devices do not have such component weights, the district court directed a verdict of noninfringement. On appeal Burke contends that the court erred in construing the preamble of the claim to require a specific weight limitation.

Determining whether a patent is infringed involves two inquiries: (1) interpreting the claims; and (2) comparing the properly interpreted claims to the accused products. *Read Corp.*, 970 F.2d at 821, 23 USPQ2d at 1431. Claims interpretation is a question of law for the district court and for this court on appeal. *See id.* at 822-23, 23 USPQ2d at 1432. On the other hand, the comparison of the properly interpreted claim to the accused product is performed as a matter of fact. *Lemelson v. United States*, 752 F.2d 1538, 1547, 224 USPQ 526, 530 (Fed. Cir. 1985).

[2] The district court legally erred when it attempted to ascertain from the specification what it perceived to be the "inventive essence," then limiting the claim through the preamble to that perceived essence. Cf. *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 957, 220 USPQ 592, 597 (Fed. Cir. 1983) (rejecting the argument that the "essence" of the invention must be read into all the claims). That kind of analysis would leave courts largely unconstrained in defining, and the public uncertain as to the scope of, the patented invention for infringement purposes.

Based on this faulty analysis the court improperly read the weight references in the specification into the claim (here, through the preamble) as a limitation on its scope. *See SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121, 227 USPQ 571, 585 (Fed. Cir. 1985) (en banc). There is still an issue as to whether the preamble words "personal mobility vehicle," themselves constitute "structural limitations of [the] claim," or merely state "a purpose or intended use for the claimed structure." *Corning Glass Works v. Sumitomo Electric U.S.A. Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989). At this stage of the

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ecution

of the invention" was a light-weight component. A weight limitation in the claim would be indefinite for invention. Because the no express weight limitation is necessary, to fairly, to interpret the claim, "permissible" to mean a vehicle 30 pounds or less. This was based on language in the abstract and summary. Because the accused component weights, directed a verdict of noninfringement. Burke contends that striking the preamble of the claim to a specific weight

er a patent is infringed: (1) interpreting the claim by the properly interpreted the accused products. *Read Corp.*, 23 USPQ2d at 1431. It is a question of law for this court on appeal. 23 USPQ2d at 1432, the comparison of the claim to the accused claim as a matter of fact. *States*, 752 F.2d 1538, 1540, 530 (Fed. Cir. 1985). It legally erred when it construed the specification as the "inventive essence" of the claim through the perceived essence. *Cf. Read Corp.*, 724 F.2d 951, 957 (Fed. Cir. 1983) that the "essence" of the claim should be read into all the analysis would leave the court in defining, and as to the scope of, the claim for infringement.

ity analysis the court weight references in the claim (here, through limitation on its scope). *tsushita Elec. Corp. v. Matsushita Elec. Corp.*, 1121, 227 USPQ 57, (in banc). There is still under the preamble words "vehicle," themselves containing limitations of [the] "a purpose or intended structure." *Corning sionto Electric U.S.A.*, 1257, 9 USPQ2d 1962, 1969. At this stage of the

litigation, we are not convinced that the preamble is other than a statement of purpose and use.

The expressly claimed structural elements — modular, separable components — may reasonably define a "personal mobility" vehicle, a term which the inventor asserts that he coined. And the references in the abstract and summary of the invention to the maximum weight of the various components of the invention may reasonably be viewed as stating a desirable characteristic of these components, particularly in light of the prosecution history. In pursuing his patent in the Patent and Trademark Office, Kramer stated: "As described in the specification, it is desirable for the component units of the vehicle to each weigh less than thirty pounds." (Emphasis added.) The preamble's general description of the invention as a "personal mobility vehicle" has not been shown to be a structural limitation as to component weight. *See Intel Corp. v. United States Int'l Trade Comm'n*, 946 F.2d 821, 836, 20 USPQ2d 1161, 1174 (Fed. Cir. 1991).

Because the district court's analysis was faulty, and because at this stage of the litigation the claim reasonably may be construed as having no weight limitation, we are persuaded that the district court erred in directing a verdict of no infringement based on a perceived component weight limitation of 30 pounds.

B. The district court also directed a verdict of no infringement by construing the language of paragraph (d) of claim 1 as containing a one-battery limitation. That language reads: "A personal mobility vehicle comprising . . . (d) a battery unit including a battery member . . ." Because the accused devices do not infringe the patent if claim 1 has the one-battery limitation, the district court rendered judgment of noninfringement as a matter of law. On appeal Burke contends that the court erred in construing paragraph (d) of claim 1 as so limited.

[3] As a general rule, "comprising" and "including" are open-ended terms which cover the structural elements recited plus additional elements. *See 2 D. Chisum, Patents* § 8.06 [1] (1992). To ascertain the intended meaning of claim language, the court may, among other things, look to the patent prosecution history. *Read Corp.*, 970 F.2d at 1423, 23 USPQ2d at 1432. The prosecution history before us does not indicate that the claim words "comprising . . . a battery unit including a battery member" should be construed narrowly to exclude additional elements. Although Kramer noted during prosecution that the cited *Voyager VI* reference

has two electric motors and two batteries, he distinguished *Voyager VI* because it lacked a modular frame as well as other features of his claimed invention. In view of the subsequent amendments to the claims, the number of batteries apparently had no relevancy to patentability of Kramer's invention. Thus, at the directed verdict stage of litigation, it was improper for the district court as a matter of law to limit the broad language of the claim to require a single battery based on prosecution history which at best was inconclusive.

#### IV.

Accordingly, the judgment based on the directed verdict of invalidity and noninfringement is vacated and the case is remanded for trial.<sup>6</sup>

#### COSTS

Costs are awarded to Burke.

#### Court of Appeals, Federal Circuit

Altech Controls Corp. v. PTL Controls Inc.

No. 92-1345

Decided May 27, 1993  
(Unpublished)

#### PATENTS

##### 1. Patentability/Validity — In general (§115.01)

Federal district court, in action for infringement of claims 1, 3, 5, and 7 of patent for controlling refrigerant pressure in single compressor refrigeration system, erred by concluding that entire patent was invalid, since no evidence indicates existence of case or controversy regarding claims 2, 4, or 6.

##### 2. Patentability/Validity — Anticipation — Prior art (§115.0703)

Federal district court, in holding claims for controlling refrigerant pressure in single compressor refrigeration system invalid un-

<sup>6</sup>In reversing the directed verdict for E&J and Invacare, we do not decide that Burke is entitled to judgment as a matter of law, nor that E&J and Invacare are *In futuro* precluded from judgment as a matter of law. We decide only that at this stage of the litigation, on the record developed thus far, E&J and Invacare have not demonstrated that they are entitled to judgment as a matter of law.